

**AMENDMENTS TO THE CLAIMS (CLEAN VERSION)**

1. (Cancelled)
2. (Currently Amended) A rotating electrical machine comprising:
  - a rear bearing;
  - a rotor centered and mounted on a rotating shaft supported by at least the rear bearing, the rear bearing comprising radial outlets for a cooling fluid;
  - a stator surrounding the rotor, the stator comprising a field coil that has windings forming the phases of the electrical machine;
  - a power electronics circuit connected to the windings of the stator phases;
  - a heat dissipating bridge that has a first surface on which the power electronics circuit is mounted and a second surface, opposite said first surface and oriented toward the rear bearing;
  - wherein said second surface forms a wall for a radial flow passageway for the flow of cooling fluid, and another wall for the radial flow passageway is formed by the rear bearing supporting the rotor;
  - wherein the second surface of the heat dissipating bridge has cooling means arranged in the fluid flow passageway; and
  - wherein the cooling means are arranged radially in the direction of the cooling fluid flow.
3. (Currently Amended) The rotating electrical machine according to Claim 2, wherein the cooling means include cooling fins.
4. (Currently Amended) The machine according to Claim 3, wherein the cooling fins form radially oriented cooling channels.
5. (Currently Amended) The rotating electrical machine according to Claim 2, wherein the cooling means have columns.
6. (Currently Amended) The machine according to Claim 5, wherein the cooling means comprise fins and columns.

7. (Currently Amended) The machine according to Claim 5, wherein at least a plurality of the columns form contacts for mounting the heat dissipating bridge to the rear bearing.
8. (Currently Amended) The rotating electrical machine according to Claim 2, wherein the cooling means are formed with at least one cambered portion of the second surface of the heat dissipating bridge.
9. (Currently Amended) A rotating electrical machine comprising:
  - a rear bearing;
  - a rotor centered and mounted on a rotating shaft supported by at least the rear bearing, the rear bearing comprising radial outlets for a cooling fluid;
  - a stator surrounding the rotor, the stator comprising a field coil that has windings forming the phases of the electrical machine;
  - a power electronics circuit connected to the windings of the stator phases;
  - a heat dissipating bridge that has a first surface on which the power electronics circuit is mounted and a second surface, opposite said first surface and oriented toward the rear bearing;
  - wherein said second surface forms a wall for a radial flow passageway for the flow of cooling fluid, and another wall for the radial flow passageway is formed by the rear bearing supporting the rotor;
  - wherein the second surface of the heat dissipating bridge has cooling means arranged in the fluid flow passageway; and
  - wherein the rear bearing has a bottom that forms one of the walls of the radial flow passageway, wherein the bottom is extended to its external periphery by an edge equipped with lateral outlets and wherein the rear bearing holds at least one deflector placed at the exit of the lateral outlets of the edge of the rear bearing.
10. (Currently Amended) The rotating electrical machine according to Claim 8, wherein it has a protective hollow cover covering the power electronics circuit and the heat dissipating bridge and the deflector are formed at the free end of the cover.

11. (Currently Amended) The rotating electrical machine according to Claim 9, wherein a free end of the cover is flared to form the deflector.
12. (Currently Amended) The rotating electrical machine according to Claim 9, wherein the protective cover has at least one opening that communicates with the cooling fluid flow passageway.
13. (Currently Amended) The rotating electrical machine according to Claim 2, wherein at least one space is provided between the rotating shaft of the rotor and the heat dissipating bridge forming an axial fluid flow passageway.
14. (Currently Amended) The rotating electrical machine according to Claim 2, wherein the second surface of the heat dissipating bridge comprises a planar surface disposed above the rear bearing.
15. (Currently Amended) The rotating electrical machine according to Claim 8, wherein the heat dissipating bridge is mounted on the rear bearing with mounting braces.
16. (Currently Amended) The rotating electrical machine according to Claim 14, wherein the heat dissipating bridge is mounted above the rear bearing with contacts integrated in the heat dissipating bridge.
17. (Currently Amended) The rotating electrical machine according to Claim 2, further comprising a layer of electrically insulating material disposed between the heat dissipating bridge and the rear bearing.
18. (Currently Amended) The rotating electrical machine according to Claim 3, wherein the axial end of the fins integrated in the heat dissipating bridge are located separate from the rear bearing.
19. (Currently Amended) The rotating electrical machine according to Claim 2, wherein the heat dissipating bridge, comprising the cooling means, and the bridge carrying the power electronics circuit are a single piece.

20. (Currently Amended) The rotating electrical machine according to Claim 2, wherein the power electronics circuit comprises power components placed on tracks.

21. (Currently Amended) The rotating electrical machine according to Claim 2, further comprising a reversible alternator.